equipped doors. Separate toilet facilities shall be provided for male and female employees except when toilet rooms will be occupied by only one person at a time.

(2) Washing and toilet facilities shall be regularly cleaned and maintained in good order.

(b) *Drinking water.* (1) Potable drinking water shall be accessible to employees at all times.

(2) Potable drinking water containers shall be clean, containing only water and ice, and shall be fitted with covers.

(3) Common drinking cups are prohibited.

(c) *Prohibited eating areas.* Consumption of food or beverages in areas where hazardous materials are being stored or handled shall be prohibited.

(d) *Garbage and overboard discharges.* Work shall not be conducted in the immediate vicinity of uncovered garbage or in the way of overboard discharges from the vessel's sanitary lines unless employees are protected from the garbage or discharge by a baffle or splash boards.

§ 1917.128 Signs and marking.

(a) *General.* Signs required by this part shall be clearly worded and legible, and shall contain a key word or legend indicating the reason for the sign.

(1) Key words are such words as Danger, Warning, Caution.

(2) Legends are more specific explanations such as High Voltage, Close Clearance, Pedestrian Crossing.

(b) *Specific.* Every marine terminal shall have conspicuously posted signs as follows:

(1) Locations of first aid facilities;

(2) Locations of telephones;

(3) Telephone numbers of the closest ambulance service, hospital or other source of medical attention, police, fire department, and emergency squad (if any); and

(4) Locations of firefighting and emergency equipment and fire exits.

Subpart G—Related Terminal Operations and Equipment

§ 1917.151 Machine guarding.

(a) *Definition.* ''Guarded'' means shielded, fenced, or enclosed by covers, casings, shields, troughs, spillways or railings, or guarded by position or location. Examples of guarding methods are guarding by location (positioning hazards so they are inaccessible to employees) and point of operation guarding (using barrier guards, two-hand tripping devices, electronic safety devices, or other such devices).

(b) *General.* (1) Danger zones on machines and equipment used by employees shall be guarded.

(2) Where chips and dust produced by machine operation may result in a hazard to the operator, the machinery shall be equipped with an effective exhaust system at the point of origin, or other equally effective means shall be provided to protect the operator.

(3) Fixed machinery shall be secured to prevent shifting.

(4) A power cut-off device for machinery and equipment shall be provided at the operator's working position.

(5) Machines driven by belts and shafting shall be fitted with a belt-locking or equivalent protective device if the belt can be shifted.

(6) In operations where injury to the operator might result if motors were to restart after power failures, provisions shall be made to prevent machines from automatically restarting upon restoration of power.

(7) The power supply to machines shall be turned off, locked out, and tagged out during repair, adjustment, or servicing.

(8) Machines shall be maintained in a safe working condition.

(9) Only designated employees shall maintain or repair machinery and equipment.

(10) Machines with defects that affect the safety of operation shall not be used.

(c) *Hand-fed circular ripsaws and hand-fed circular crosscut table saws.* Unless fixed or manually adjustable enclosures or guarding provides equivalent protection, hand-fed circular ripsaws and hand-fed circular crosscut table saws shall be guarded as follows to keep employees clear of any danger zones:

(1) They shall be equipped with hoods completely enclosing those portions of the saw above the table and the material being cut;

(2) They shall have spreaders to prevent material from squeezing the saw. Spreaders shall be in true alignment with the saw. Spreaders may be removed only during grooving, dadoing, or rabbeting operations, and shall be replaced at the completion of such operations; and

(3) They shall have non-kickback fingers or dogs to oppose the tendency of the saw to pick up material or throw material toward the operator.

(d) *Swing cutoff saws.* (1) Swing cutoff saws shall have hoods completely enclosing the upper half of the saw, the arbor end and the point of operation at all saw positions to protect the operator from material thrown up by the saw. The hood shall automatically cover the lower portion of the blade, so that when the saw returns to the back of the table the hood rises on top of the fence, and when the saw is moved forward the hood drops on top, remaining in contact with the table or the material.

(2) Swing cutoff saws shall have a device to return the saw automatically to the back of the table without rebound. The device shall not be dependent upon rope, cord or springs.

(3) Devices shall be provided to prevent saws from swinging beyond the front or back edges of the table.

(4) Inverted swing cutoff saws shall have hoods covering the part of the saw protruding above the table top or the material being cut. Hoods shall automatically adjust to the thickness of, and remain in contact with, material being cut.

(e) *Radial saws.* Unless fixed or manually adjustable enclosures or guards provide equivalent protection, radial saws shall be guarded as follows:

(1) The upper hood of radial saws shall enclose the upper portion of the blade up to and including the end of the saw arbor and shall protect the operator from being struck by debris. The sides of the lower exposed portion of the blade shall be guarded to the blade diameter by a device automatically adjusting to the thickness of the stock and remaining in contact with the stock. The lower guard may be removed only when the saw is used for bevel cuts;

(2) Radial saws used for ripping shall have non-kickback fingers or dogs on both sides to oppose the thrust or tendency of the saw to pick up material or throw material toward the operator;

(3) Adjustable stop shall be provided to prevent travel of radial saw blades beyond the table's edge;

(4) Radial saws shall be installed so that the cutting head returns to the starting position without rebound when released; and

(5) The employer shall direct that employees perform ripping and ploughing against the saw turning direction. Rotation direction and an indication of the end of the saw to be used shall be conspicuously marked on the hood.

(f) *Band saws and band resaws.* (1) Saw blades and band saw wheels shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table, to protect employees from point-of-operation hazards and flying debris.

(2) Band saws shall be equipped with brakes to stop the band saw wheel if the blade breaks.

(3) Band saws shall be equipped with a tension control device to keep the blade taut.

(g) *Abrasive wheels and machinery.* (1) Abrasive wheels shall be used only on machines having enclosure guards to restrain pieces of grinding wheels and to protect employees if the wheel breaks, except as provided in paragraphs (g)(2) and (g)(3) of this section. Where the operator must stand in front of the safety guard opening, the safety guard shall be adjustable or have an adjustable tongue or piece at the top of the opening. The safety guard or the tongue shall be adjusted so that they are always close to the periphery of the wheel. Guards shall be aligned with the wheel and the strength of fastenings shall be greater than the strength of the guard.

(2) When the work provides equivalent protection, or when the machine is designed as a portable saw, guards may be constructed with the spindle end, nut and outer flange exposed. When the work entirely covers the side of the wheel, the side covers of the guard may be removed.

(3) Guarding is not required:

(i) For wheels used for internal work while the wheel is contained within the work being ground; or

(ii) For mounted wheels 2 inches (5 cm) and smaller in diameter used in portable operations.

(4) Work rests shall be used on fixed grinding machines. Work rests shall be rigidly constructed and adjustable for wheel wear. They shall be adjusted closely to the wheel with a maximum opening of ⅛-inch (3.18 mm) and shall be securely clamped. Adjustment shall not be made while the wheel is in motion.

(5) Grinding wheels shall fit freely on the spindle. The spindle nut shall be tightened only enough to hold the wheel in place.

(6) Grinding machine wheels shall turn at a speed that is compatible with the rated speed of the wheel.

(7) Flanges and blotters shall be used only with wheels designed for their use. Flanges shall be of a type ensuring retention of pieces of the wheel in case of breakage.

(8) Abrasive wheels with operational defects shall not be used.

(h) *Rotating parts, drives and connections.* (1) Rotating parts, such as gears and pulleys, that are located 7 feet (2.13 m) or less above working surfaces shall be guarded to prevent employee contact with moving parts.

(2) Belt, rope and chain drives shall be guarded to prevent employees from coming into contact with moving parts.

(3) Gears, sprockets and chains shall be guarded to prevent employees from coming into contact with moving parts. This requirement does not apply to manually operated sprockets.

[48 FR 30909, July 5, 1983, as amended at 65 FR 40942, June 30, 2000]

§ 1917.152 Welding, cutting and heating (hot work)[12] (See also § 1917.2, definition of Hazardous cargo, materials, substance, or atmosphere).

(a) *Definition.* ''Hot work'' means riveting, welding, flame cutting or other fire or spark-producing operation.

(b) *Hot work in confined spaces.* Hot work shall not be performed in a confined space until a designated person has tested the atmosphere and determined that it is not hazardous.

(c) *Fire protection.* (1) To the extent possible, hot work shall be performed in designated locations that are free of fire hazards.

(2) When hot work must be performed in a location that is not free of fire hazards, all necessary precautions shall be taken to confine heat, sparks, and slag so that they cannot contact flammable or combustible material.

(3) Fire extinguishing equipment suitable for the location shall be immediately available and shall be maintained in readiness for use at all times.

(4) When the hot work operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire during hot work and for a sufficient time after completion of the work to ensure that no fire hazard remains. The employer shall instruct all employees involved in hot work operations as to potential fire hazards and the use of firefighting equipment.

(5) Drums and containers which contain or have contained flammable or combustible liquids shall be kept closed. Empty containers shall be removed from the hot work area.

(6) When openings or cracks in flooring cannot be closed, precautions shall be taken to ensure that no employees or flammable or combustible materials on the floor below are exposed to sparks dropping through the floor. Similar precautions shall be taken regarding cracks or holes in walls, open doorways and open or broken windows.

(7) Hot work shall not be performed:

(i) In flammable or potentially flammable atmospheres:

(ii) On or in equipment or tanks that have contained flammable gas or liquid or combustible liquid or dust-producing material, until a designated person has tested the atmosphere inside the equipment or tanks and determined that it is not hazardous; or

(iii) Near any area in which exposed readily ignitable materials such as

[12] The U.S. Coast Guard, at 33 CFR 126.15(c), requires prior permission of the Captain of the Port if welding or other hot work is to be carried out at a facility where dangerous cargoes as defined by 33 CFR 126.07 are located or being handled.